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ABSTRACT

This report was based on a survey to determine how students in the health professions of medicine osteopathy, dentistry, optometry, pharmacy, podiatry, and veterinary medicine financed their educations during the 1970-71 school year. The purpose of this nationwide survey was to provide information on patterns of student expenses and on the sources from which income was obtained, including any indebtedness incurred to finance their education. Marital status to be the single most important factor in determining both expenses and incomes of students in the health programs. Spouses tended to contribute more than twice as much income as any other source. The average annual expenses were highest--between \$6,231 and \$6,710--for students in dentistry, podiatry, and osteopathy, and lowest--\$3,739--for those in pharmacy. Approximately 35 percent of all students reported receiving federal or state scholarships or other nonrefundable grants. While the proportion of students obtaining loans ranged from 43 percent for pharmacy students to 70 percent for osteopathy students. Findings showed that the majority of students in all health profession schools reported some indebtedness as of June 1971. (Author/PC)

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how health professions students finance their education

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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
HEALTH RESOURCES ADMINISTRATION
Bureau of Health Resources Development
Division of Manpower Intelligence

October 1973

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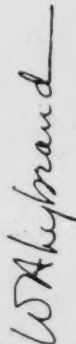
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INTRODUCTION □

This report is based on a survey sponsored by the Bureau of Health Manpower Education to determine how students in the health professions of medicine, osteopathy, dentistry, optometry, pharmacy, podiatry, and veterinary medicine financed their educations during the 1970-71 school year. The purpose of this nationwide survey was to provide information on patterns of expenses of students and on the sources from which income was obtained, including any indebtedness incurred to finance the students' educations.

The survey was made by a private research organization, under contract, in cooperation with the various professional schools, the Association of American Medical Colleges, the American Osteopathic Association, the American Dental Association, the American Association of Colleges of Podiatric Medicine, the American Association of Colleges of Pharmacy, the American Association of Colleges of Podiatric Medicine, and the American Veterinary Medical Association. Two similar reports of surveys covering only medical and osteopathic students were published in the past by the U. S. Public Health Service, the first in 1965¹ and the second in 1970.²

This report has been prepared under the direction of Anna R. Crocker of the Division of Manpower Intelligence with the assistance of Mary D. Overpeck as consultant.



William A. Lybrand, Ph.D.
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SUMMARY □

the pharmacy students received help from a marriage partner. The amount of income from this source dropped with increasing family size. Childless married students acquired the smallest proportion of their incomes from loans in comparison to those with children or the single students, and they also reported income exceeding expenses far more often than did the other students.

The average annual income ranged from \$3,008 for pharmacy students, to \$5,115 for dental students, Two-thirds of the medical and osteopathic students, and four-fifths of the veterinary medical students reported income from their own earnings and savings. The average amount of student annual income from this source ranged between \$1,439 and \$1,769 for all the professions, except podiatry. For podiatry students the average annual income was \$2,030. Twenty-eight to 54 percent of the students in different professions worked an average of from 14 to 20 hours a week. About one-half of the students received contributions from their parents with average contributions ranging from \$1,245 to \$2,159 among the disciplines. Pharmacy students had the lowest incomes, the highest proportion of students who worked while attending school, and the highest median number of hours worked. They also borrowed least often and obtained the lowest average loans.

Marital status seemed to be the single most important factor in determining both the expenses and incomes of students in the seven health professions which were surveyed during the 1970-71 school year. The health professions surveyed were: medicine, osteopathy, dentistry, optometry, pharmacy, podiatry, and veterinary medicine. Average annual expenses were highest — between \$6,231 and \$6,710 — for students of dentistry, podiatry, and osteopathy. They were lowest — \$3,739 — for pharmacy students.

Pharmacy schools had the smallest proportion of married students of any of the professions. Osteopathy, dentistry, and podiatry schools had the highest proportions of married students. Expenses rose with increasing family size. The cost of school expenses remained about the same whether the students were single or married and ranged between 28 and 38 percent of the average annual expenses of the students in the different professions. The amounts were highest for students of osteopathy and dentistry, and lowest for students of pharmacy and veterinary medicine.

Spouses tended to contribute more than twice as much income as any other source, the amounts ranging among the disciplines from \$3,286 to \$4,905, with between 36 and 44 percent of most of the students receiving a spouse's help. Only 21 percent of

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Roughly 35 percent of all the students reported receiving Federal or State scholarships or other nonrefundable grants. Approximately one-fourth of the students in most professions received scholarships under the Federal health professions scholarship program. However, only 18 percent of the medical students and as much as 35 percent of the osteopathic students reported the Federal scholarship program as a source. Medical students received the highest average scholarship — \$964; osteopathy students, the lowest — \$469. Scholarship averages for the other disciplines ranged between \$628 and \$763. Money from the Federal scholarship program provided about 3 percent of the students' incomes, more than any other grant or scholarship program.

The proportions of students obtaining loans ranged from 43 percent for pharmacy students to 70 percent for osteopathy students. For those students acquiring loans, the average amount borrowed ranged from \$1,179 to \$2,298, again the lowest amount for pharmacy students, and the highest for osteopathy students. About one-half of the students reporting loans received one through the Federal health profes-

sions loan program. The average amount of such loans [except for medical students] fell in the range of \$661 to \$885. The average loan to medical students was \$1,084. Funds from the Federal health professions loan program usually provided the largest proportion of students' income from a single loan source — about 5 percent. State government loans occasionally provided similar or larger amounts. The Federal loan program lent \$21.7 million, representing 26 percent of all money reported as loans. Altogether, scholarships and loans from the Federal health professions programs represented about 8 percent of the income of all health professions students.

A majority of students in all health professions schools reported some indebtedness as of June 1971. Among students in schools of pharmacy who were younger and less apt to be married than students in the other health professions schools, 56 percent of the students reported debts. In the other health professions schools, the proportion of students with debts ranged from 65 percent of the medical students to 79 percent of the osteopathic students.

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QUESTIONNAIRE □ RETURNS

In the middle of the 1970-71 school year more than 14,000 students from 126 schools were surveyed, with an overall response rate of about 88 percent.

The entire student body of the 11 schools of optometry and 5 schools of podiatry were included. In the fields of osteopathic and veterinary medicine only half of the students in each school, [seven osteopathic and 18 veterinary medicine] were surveyed. For the remaining disciplines, schools were stratified by geographic division and type of control [public or private]. Sampling rates for these disciplines were as follows: for medicine, one of every four students in every third school; for dentistry, one of every four students in every other school; for pharmacy, one of every three students in every third school. Thirty-four medical schools, 26 dental schools, and 25 schools of pharmacy were included in the survey.

Although the over-all response rate of about 88 percent was fairly high, some bias could be present due to characteristics of the nonrespondents. Since the response rates were lower for the upper-classmen, the overall study results could be biased to the extent that their expenses, incomes, and indebtedness were different [possibly greater] than those of the underclassmen.

It should be noted that all data are based on estimates reported by students. Consequently, there may be little, if any, agreement with similar data from school or other sources.

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1. CHARACTERISTICS

Whereas slightly less than half of the families in the United States had incomes of more than \$10,000 in 1970, relatively more health professions students came from families with higher incomes (Table 1). Students in optometry and pharmacy came from families with incomes very similar to those in the general population. Family income tended to be higher in the other professions. One-third of the

medical students and one-fourth of the dental students came from families with incomes of \$20,000 or more. The proportion of students from families with incomes of less than \$10,000 ranged from 27 percent of the medical students to 40 percent of the veterinary students. A vast majority of the black students in all professions came from families with incomes of less than \$10,000, with the proportions ranging from 60 percent of the black optometry students to almost 90 percent of the black students in pharmacy schools.

FINDINGS FOR HEALTH PROFESSIONS STUDENTS

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Table 1
DISTRIBUTION OF HEALTH PROFESSIONS STUDENTS BY FAMILY INCOME
Compared to all families in the United States: 1970

Family income	All families in U.S., 1970 ¹	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Total number of students ²	—	39,213	2,039	16,021	2,712	19,583	11,074	4,816
Total percent ³	100%	100%	100%	100%	100%	100%	100%	100%
Less than \$ 5,000 . . .	19	7	12	7	19	17	11	12
\$5,000 - \$ 9,999 . . .	32	20	25	22	30	32	25	28
\$10,000 - \$14,999 . . .	27	25	28	30	27	29	28	30
\$15,000 - \$19,999 . . .	18 ⁴	15	13	16	14	13	15	14
\$20,000 - \$24,999 . . .	18 ⁴	11	7	11	4	5	10	8
\$25,000 or more	5	22	14	14	6	5	11	9

¹ Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Reports, Consumer Income*, Series P, 60, No. 80.

² Based on number of students who supplied data on family income.

³ Individual income percentages may not add to totals due to rounding.

⁴ Not reported separately.

Table 2
DISTRIBUTION OF HEALTH PROFESSIONS STUDENTS BY FATHER'S OCCUPATION
In comparison with all employed males in the United States: 1970

Father's occupation	All U.S. employed males ¹	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Total percent, all occupations	100%	100%	100%	100%	100%	100%	100%	100%
Physician	13	15	11	4	3	2	3	3
Dentist	13	2	1	7	1	4	3	1
Optometrist	13	1	1	4	9	4	4	4
Pharmacist	13	2	2	1	1	7	3	4
Podiatrist	13	4	4	4	4	0	7	0
Veterinarian	13	4	4	4	4	4	0	4
Other health worker	13	1	1	1	1	1	1	4
Other professional and technical worker	13	28	18	24	18	15	14	21
Owner, manager, proprietor	15	20	24	23	24	16	29	18
Clerical	7	5	5	4	6	8	4	4
Sales	6	7	8	9	8	7	11	7
Craftsman, skilled worker	21	10	16	16	16	24	16	15
Unskilled worker	26	5	8	6	7	11	7	6
Farmer, farm worker	5	3	4	3	4	8	2	21
Other occupations	6	1	1	1	1	1	1	4

¹ Source: U.S. Department of Labor, Bureau of Labor Statistics Special Labor Force Report No. 129, *Employment and Unemployment in 1970*. Based on all employed males, 20 years old and over, for the United States in 1970.

² Detail may not add to percent totals because of independent rounding.

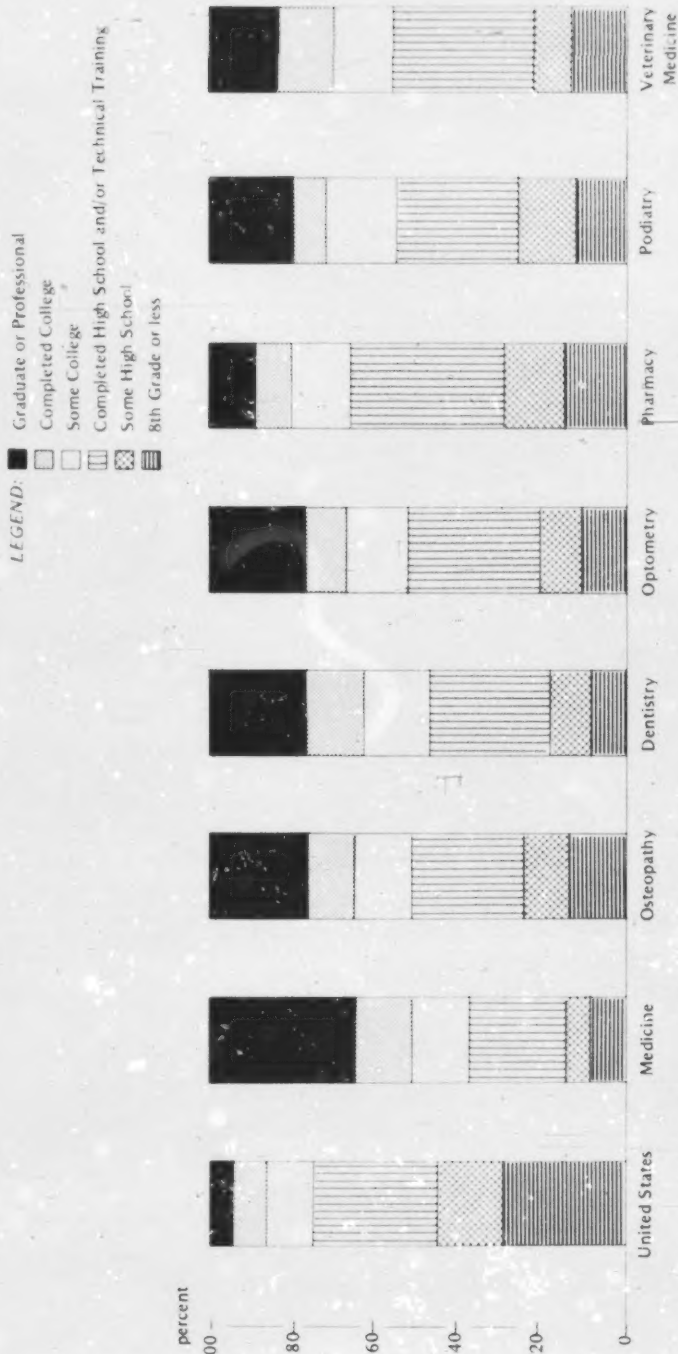
³ Not available separately for all U.S. employed males.

⁴ Less than 0.5%.

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Figure 1
DISTRIBUTION OF HEALTH PROFESSIONS STUDENTS BY FATHER'S EDUCATIONAL LEVEL
In comparison to all U.S. males, 25 years and over: 1970

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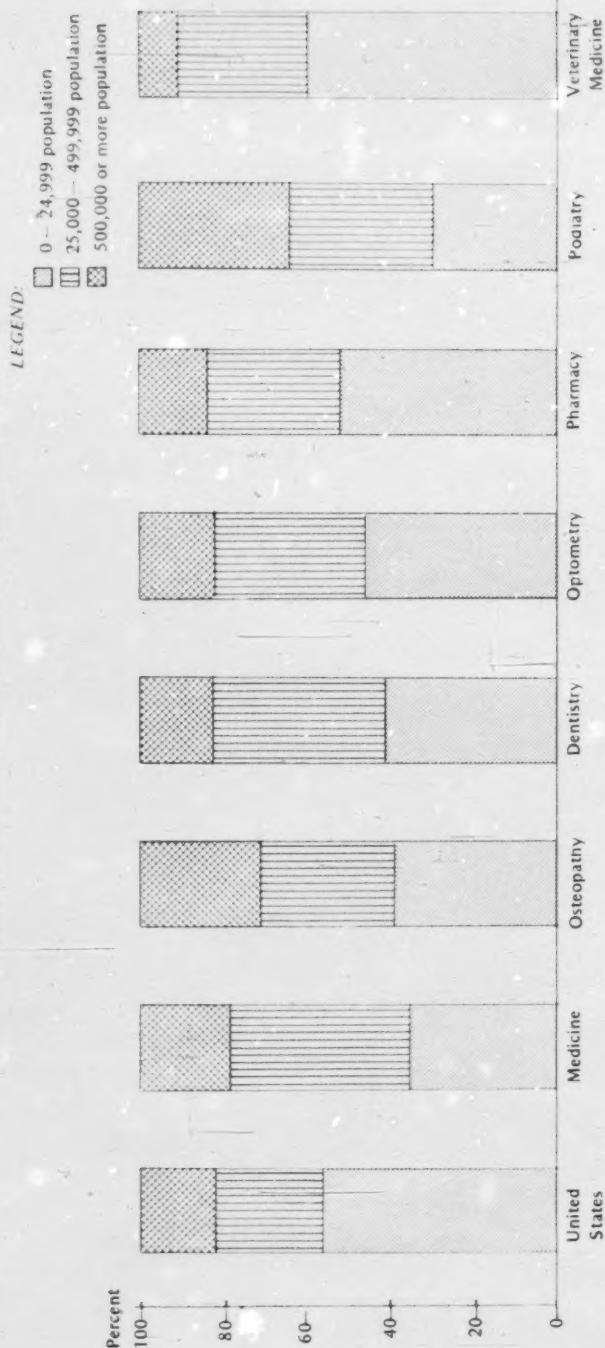


Only one percent of all men 20 years old or over in the United States were employed in the health professions in 1970 [Table 2]. Yet, the fathers of students surveyed were much more frequently in the health field, ranging from 8 percent of the fathers of veterinary students to 21 percent of medical. Almost half of the fathers of medical students were in either the health field or in professional and technical work. Approximately three-fifths of the fathers of students in most of the other professions either were in the health, professional, or technical fields, or were owners, managers, or proprietors. Exceptions were fathers of students in pharmacy and veterinary medicine. A comparatively large proportion [24 percent] of the former had fathers who were crafts-men or skilled workers. Twenty-one percent of the fathers of veterinary students were in farming or ranching, as might be expected.

Figure 1 shows that fathers of health professions students generally had higher educational levels than did all males in the United States who were 25 years old or over in 1970. While only one-fourth of this general population had completed college or had some graduate or professional education, approximately half of the fathers of the health professions students had acquired this level of education. The proportions ranged from 34 percent of pharmacy students' fathers to 62 percent of those of medical students.

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Figure 2
DISTRIBUTION OF HEALTH PROFESSIONS STUDENTS BY SIZE OF HOMETOWN
In comparison with distribution of all persons in the United States: 1970

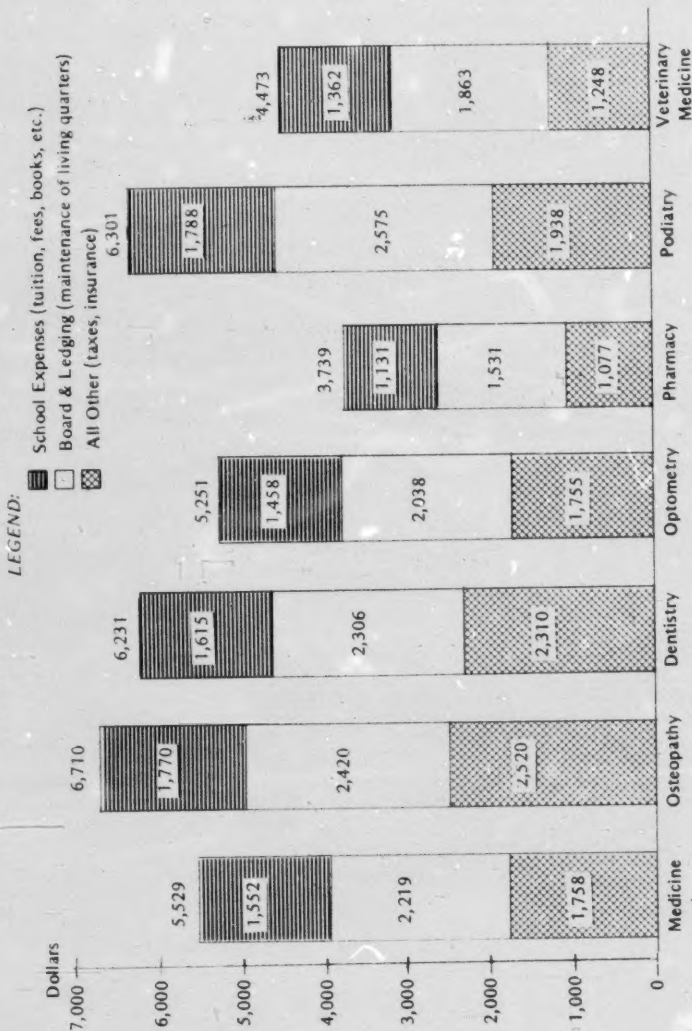


More than one-half of the United States population lived in towns of less than 25,000 persons in 1970 [Figure 2]. Three out of five of the students of veterinary medicine came from hometowns of this size, as did slightly more than half of the pharmacy students. Otherwise, the more urban areas provided comparatively more health professions students in relation to their populations. Students of osteopathy and podiatry came from cities of 500,000 persons or more far more often than did students in the other professions.

2. AVERAGE EXPENSES

Average annual expenses were highest, between \$6,231 and \$6,710, for students of dentistry, podiatry, and osteopathy. Students of medicine had expenses of \$5,529 on the average, and students of optometry averaged \$5,251. The average for students in veterinary medicine was \$4,473. Pharmacy students tend to be younger than students in the other health professions schools, which probably accounts in part for their lower expenses and incomes. [Figure 3.] The figures include estimated expenses for school tuition and fees, books and supplies, equipment and uniforms, lodging and maintenance of living quarters, board, and an inclusive category of "all other expenses" for such items as personal maintenance, transportation, medical care, family expenses, recreation, taxes, insurance, and donations.

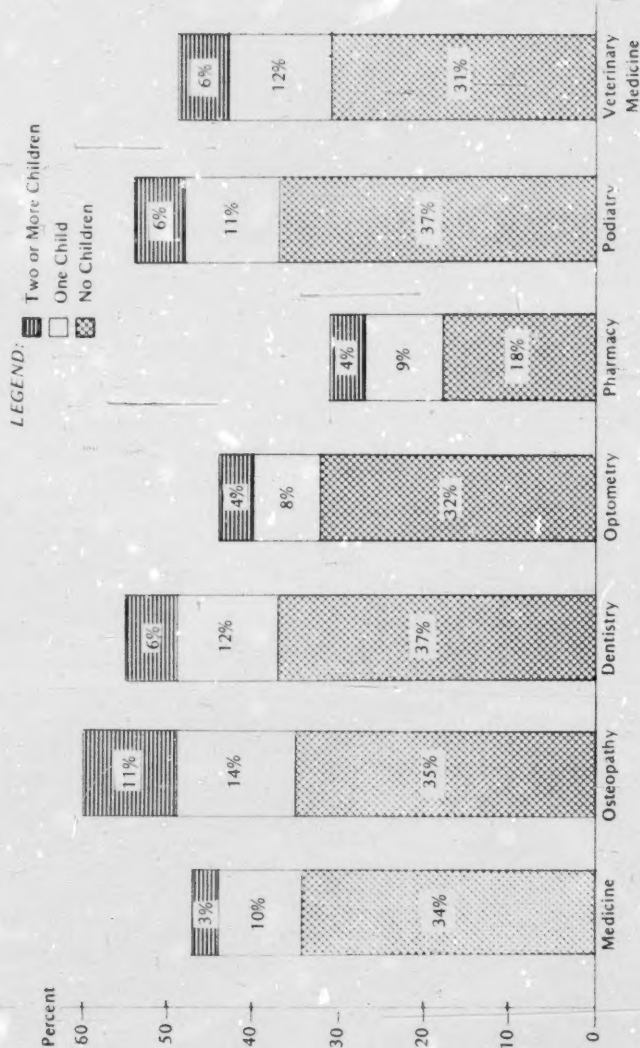
Figure 3
AVERAGE ANNUAL EXPENSES OF HEALTH PROFESSIONS STUDENTS
For selected expense items: School year 1970-71



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Marital status and number of children seemed to be the most important factors in determining the expenses of the students. Figure 4 indicates that the relatively low average expenses for pharmacy students and high expenses of osteopathy students can be related partly to the difference in proportion of married students in those two groups compared to the others. Also, marital status may be one of the main reasons for generally increasing expenses with each advancing class year. In the freshman year, the proportion of married students ranged from one-fourth of the pharmacy students to one-half of the osteopathy students. By the senior year the proportion of married students ranged from one-third for pharmacy students to three-fourths for osteopathy students.

Figure 4
DISTRIBUTION OF MARRIED STUDENTS IN EACH HEALTH PROFESSION:
School year 1970-71



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Table 3

AVERAGE ANNUAL EXPENSES OF HEALTH PROFESSIONS STUDENTS

By school class and marital status: School year 1970-71

School class and marital status	Average annual expenses						
	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Total number of students	40,280	2,151	16,599	2,823	20,577	1,136	4,998
Average expenses, all classes	\$5,529	\$6,710	\$6,231	\$5,251	\$3,739	\$6,302	\$4,473
Single	4,295	4,878	4,595	3,931	2,768	4,519	3,160
Married, no children	6,930	7,799	7,532	6,875	4,981	7,865	5,643
Married, one child	6,573	7,850	7,669	6,926	6,003	7,485	5,927
Married, two or more children	7,774	8,519	8,107	7,548	8,066	8,248	6,710
Freshman	\$4,897	\$6,180	\$6,055	\$4,668	\$3,641	\$5,525	\$4,122
Single	4,059	4,656	4,833	3,787	2,573	4,080	3,052
Married, no children	6,550	7,499	7,823	6,510	4,517	7,411	5,639
Married, one child	5,867	6,999	8,444	6,518	6,425	7,375	5,564
Married, two or more children	7,847	9,430	8,451	7,178	8,227	7,265	7,376
Sophomore	\$5,262	\$6,666	\$6,321	\$5,171	\$3,545	\$6,940	\$4,290
Single	4,166	4,690	4,604	3,883	2,465	5,449	3,071
Married, no children	6,665	8,109	7,829	7,099	4,940	7,956	5,884
Married, one child	7,123	7,555	7,761	6,825	5,887	8,260	5,623
Married, two or more children	8,362	8,413	8,409	7,569	8,382	8,430	7,190
Junior	\$5,879	\$6,931	\$6,351	\$5,669	\$3,610	\$6,331	\$4,666
Single	4,612	5,136	4,401	4,044	2,995	4,454	3,330
Married, no children	7,015	7,601	7,606	7,093	4,326	6,951	5,536
Married, one child	6,782	8,810	7,270	6,907	5,001	7,152	6,354
Married, two or more children	9,205	8,888	8,443	8,186	7,357	9,012	6,301

See footnotes at end of table.

Table 3 (Continued)
 AVERAGE ANNUAL EXPENSES OF HEALTH PROFESSIONS STUDENTS
 By school class and marital status: School year 1970-71

School class and marital status	Average annual expenses						
	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Total number of students	40,280	2,151	16,599	2,823	20,577	1,136	4,998
Senior, fifth & sixth years ¹	\$6,254	\$7,330	\$6,224	\$5,764	\$4,386	\$6,681	\$4,945
Single	4,630	5,394	4,274	4,230	3,275	4,379	3,332
Married, no children	7,288	7,944	6,957	6,754	6,660	8,105	5,570
Married, one child	6,704	7,895	7,482	7,314	7,036	7,027	6,047
Married, two or more children	6,608	7,948	7,517	7,091	6,720	8,595	6,254

¹ Some schools of pharmacy and medicine either require or offer fifth and sixth years. Students in these classes have been included as seniors.

The expenses of childless married students and those with only one child were frequently very similar within a profession and school class. They ranged from \$4,326 for childless married pharmacy students to \$8,310 for osteopathy students with one child [Table 3]. Expenses of single students ranged from \$2,465 for sophomores in pharmacy schools to \$5,449 for sophomores in podiatry schools. Expenses

for married students with more than one child ranged from \$6,254 for seniors in veterinary medicine to \$9,430 for freshmen in osteopathy. With a few exceptions the expenses tended to rise as the students married and had children. For single students expenses rose with each year of class. Among the professions, variation by class was inconsistent for the married students with or without children.

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Table 4
PERCENT DISTRIBUTION OF HEALTH PROFESSIONS STUDENTS BY AVERAGE TOTAL EXPENSES:
School year 1970-71

Average total expenses	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Total	100%	100%	100%	100%	100%	100%	100%
Less than \$2,000	3	0 ¹	2	3	21	2	24
\$2,000 - \$2,999	8	1	5	10	26	6	5
\$3,000 - \$3,999	17	7	12	21	22	14	20
\$4,000 - \$4,999	20	19	17	20	12	15	15
\$5,000 - \$5,999	19	17	15	15	6	14	13
\$6,000 - \$6,999	12	15	14	11	4	13	11
\$7,000 - \$7,999	9	16	14	9	3	14	6
\$8,000 - \$8,999	5	11	8	5	1	7	3
\$9,000 - \$9,999	3	6	6	3	1	6	1
\$10,000 or more	4	8	7	3	4	9	2

¹ Less than 0.5 percent.

Although there was a wide range in the average expenses of students across disciplines, most of the students in a specific discipline reported average expenses that were within a general range of \$2,000 to \$4,000 from each other. Less than 20 percent of the students in all disciplines except pharmacy and veterinary medicine reported average expenses under \$2,000 or over \$8,999. Twenty-four percent of the students in schools of veterinary medicine and 21

percent of the pharmacy students reported average expenses of less than \$2,000 [Table 4].

With a few exceptions the average annual expenses were higher in the New England, Midwestern, and Atlantic areas and lower in the South and the West [Table 5]. Expenses frequently varied as much as \$2,000 within a profession.

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Table 5
NUMBER OF HEALTH PROFESSIONS STUDENTS AND AVERAGE ANNUAL EXPENSES
By school control and geographic division: school year 1970-71

School control and geographic division	Average annual expenses						
	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Total number of students	40,280	2,151	16,599	2,823	20,577	1,136	4,998
Average expenses, all schools	\$5,529	\$6,710	\$6,231	\$5,251	\$3,739	\$6,301	\$4,473
U.S. possessions	—	—	—	—	2,967	—	—
New England	6,541	—	7,738	5,670	4,019	—	—
Middle Atlantic	5,583	6,281	6,210	6,003	3,785	6,395	5,508
South Atlantic	5,905	—	6,155	—	3,004	—	4,246
East South Central	5,194	—	6,049	5,547	3,154	—	4,375
West South Central	5,233	7,876	5,238	4,987	3,171	—	3,918
East North Central	5,702	6,797	6,032	4,926	4,231	5,928	4,474
West North Central	5,180	6,845	6,216	—	3,176	—	4,285
Mountain	4,543	—	—	—	2,836	—	4,643
Pacific	4,913	—	6,806	4,968	5,806	7,130	4,479
Number of students, public schools	24,387	—	9,003	877	14,046	—	4,580
Average expenses, public schools	\$5,064	—	\$5,621	\$4,447	\$3,230	—	\$4,369
U.S. possessions	—	—	—	—	2,967	—	—
New England	5,811	—	—	—	3,087	—	—
Middle Atlantic	5,003	—	5,952	—	2,804	—	4,577
South Atlantic	5,501	—	5,841	—	3,004	—	4,246
East South Central	4,795	—	5,250	4,341	3,154	—	4,523
West South Central	5,233	—	5,238	4,987	3,212	—	3,918
East North Central	5,262	—	5,357	4,442	4,155	—	4,474
West North Central	4,882	—	6,041	—	2,809	—	4,285
Mountain	4,543	—	—	—	2,836	—	4,643
Pacific	4,228	—	5,299	3,801	2,778	—	4,479

See footnotes at end of table.

Table 5 (Continued)
NUMBER OF HEALTH PROFESSIONS STUDENTS AND AVERAGE ANNUAL EXPENSES
By school control and geographic division: School year 1970-71

School control and geographic division	Average annual expenses						
	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Number of students, private schools	15,893	2,130	7,596	1,946	6,531	1,136	418
Average expenses, private schools	\$6,242	\$6,699	\$6,955	\$5,614	\$4,834	\$6,301	\$5,608
U.S. possessions	—	—	—	—	—	—	—
New England	6,613	—	7,738	5,670	4,857	—	—
Middle Atlantic	6,012	6,281	6,462	6,003	3,924	6,395	6,257
South Atlantic	6,699	—	6,516	—	—	—	—
East South Central	\$5,534	—	6,680	5,631	—	—	3,856
West South Central	—	—	—	—	2,930	—	—
East North Central	6,488	6,797	6,523	5,422	4,481	5,928	—
West North Central	5,904	6,845	6,885	—	—	—	—
Mountain	—	—	—	—	—	—	—
Pacific	6,333	—	9,235	5,406	8,039	7,130	—

¹ Eliminated for confidentiality purposes, since there was only one such school.

² There are no public schools of podiatry.

School expenses accounted for between 28 and 38 percent of the average annual expenses of students in the health professions. The average amounts spent were highest for students of osteopathy and dentistry and lowest for students of pharmacy and veterinary medicine [Table 6]. "All other expenses" represented another high outlay of funds. Lodging and maintenance of living quarters accounted for 20 to 24 percent of the total average expenses, and board was 16 to 19 percent of the average amount spent by students in all professions.

Table 6
AVERAGE ANNUAL EXPENSES OF HEALTH PROFESSIONS STUDENTS BY EXPENSE ITEM AND MARITAL STATUS:
School year 1970-71

Expense item and marital status	Average annual expenses						
	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Average expenses, all students ¹	\$5,529	\$6,710	\$6,231	\$5,251	\$3,739	\$6,301	\$4,473
Single	4,295	4,878	4,595	3,931	2,768	4,519	3,160
Married, no children	6,930	7,799	7,532	6,875	4,981	7,865	5,643
Married, one child	6,573	7,850	7,669	6,926	6,003	7,485	5,927
Married, two or more children	7,774	8,519	8,107	7,548	8,066	8,248	6,710
School expenses	1,758	2,520	2,310	1,755	1,077	1,938	1,248
Single	1,822	2,425	2,339	1,711	1,065	1,851	1,250
Married, no children	1,744	2,532	2,293	1,861	1,089	2,025	1,267
Married, one child	1,485	2,520	2,422	1,697	1,146	2,092	1,227
Married, two or more children	1,706	2,546	2,172	1,778	1,390	1,963	1,192
Lodging and maintenance of living quarters	1,263	1,352	1,323	1,178	812	1,532	1,044
Single	857	836	764	779	504	963	672
Married, no children	1,715	1,668	1,760	1,665	1,222	1,967	1,400
Married, one child	1,597	1,721	1,733	1,614	1,519	1,903	1,402
Married, two or more children	1,915	1,806	1,798	1,821	1,525	2,125	1,562
Board	956	1,068	983	860	719	1,043	819
Single	725	635	640	586	469	691	537
Married, no children	1,177	1,189	1,198	1,147	901	1,295	989
Married, one child	1,171	1,302	1,248	1,242	1,028	1,284	1,181
Married, two or more children	1,615	1,672	1,626	1,463	2,423	1,561	1,537

See footnotes at end of table.

Table 6 (Continued)

AVERAGE ANNUAL EXPENSES OF HEALTH PROFESSIONS STUDENTS BY EXPENSE ITEM AND MARITAL STATUS:
School year 1970-71

Expense item and marital status	Average annual expenses						
	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Average expenses, all students	\$5,529	\$6,710	\$6,231	\$5,251	\$3,739	\$6,301	\$4,473
All other expenses	1,552	1,770	1,615	1,458	1,131	1,788	1,362
Single	892	881	852	855	730	1,014	700
Married, no children	2,294	2,410	2,281	2,202	1,768	2,578	1,987
Married, one child	2,319	2,307	2,266	2,373	2,309	2,206	2,118
Married, two or more children	2,537	2,495	2,511	2,486	2,728	2,600	2,470

Expense items may not add to total average expenses because of independent rounding.

Annual expenses were about \$1,200 higher for students in private schools than in public schools [Table 7]. Usually, most of this difference was accounted for in the area of school expenses, although both board and lodging were frequently slightly more expensive for students in private schools than for those in public. For private school students school expenses ranged from 31 to 43 percent of the annual average expenses so that the other areas of expense comprised relatively lower proportions of these students' total monetary requirements.

The costs of board and lodging for married students were about double those of the single students, varying somewhat by profession and the number of children. The costs of "all other expenses" for those with two or more children were approximately three times what they were for single students. No large or consistent variation among the disciplines existed in the average annual expenses of students from families with different income levels.

Table 7
AVERAGE ANNUAL EXPENSES OF HEALTH PROFESSIONS STUDENTS BY SCHOOL CONTROL AND EXPENSE ITEM
School year 1970-71

School control and expense item	Average annual expenses						
	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
All students, average expenses ¹	\$5,529	\$6,710	\$6,231	\$5,251	\$3,739	\$6,301	\$4,473
School expenses	1,758	2,520	2,310	1,755	1,077	1,938	1,248
Lodging and maintenance of living quarters	1,263	1,352	1,323	1,178	812	1,532	1,044
Board	956	1,068	983	860	719	1,043	819
All other expenses	1,552	1,770	1,615	1,458	1,131	1,788	1,362
Public schools, average expenses	5,064	2	5,621	4,447	3,230	3	4,369
School expenses	1,319	2	1,719	1,124	748	—	1,151
Lodging and maintenance of living quarters	1,247	2	1,277	1,149	766	—	1,036
Board	932	2	967	816	655	—	815
All other expenses	1,566	2	1,658	1,358	1,060	—	1,367
Private schools, average expenses	6,242	6,699	6,955	5,614	4,834	6,301	5,608
School expenses	2,430	2,520	3,009	2,040	1,782	1,938	2,301
Lodging and maintenance of living quarters	1,289	1,348	1,380	1,191	912	1,532	1,131
Board	991	1,064	1,004	880	867	1,044	877
All other expenses	1,532	1,767	1,562	1,503	1,273	1,788	1,299

¹ Expense items may not add to total average expenses because of rounding.
² Eliminated for confidentiality purposes since there was only one public school.
³ There are no public schools of podiatry.

3. SOURCES OF INCOME

Most students in the health professions used a variety of sources to finance their education. Table 8 shows that between 74 and 85 percent of the income reported by students came from nonrefundable sources. Students of osteopathy obtained the highest proportion of their income from loans, 26 percent, while pharmacy students borrowed the lowest proportion, 15 percent. More than two-thirds of all students' incomes came from three sources: their own earnings and savings, spouses' contributions, and parents' contributions. Spouses' contributions provided the largest proportion of any source — 30 to 34 percent — except for the pharmacy students, relatively few of whom were married. Pharmacy students received only 20 percent of their income from spouses' contributions. The percent of income from a student's earnings and savings was generally larger than that from his parent's contributions although the proportions from these two sources were very similar for students of medicine and osteopathy. Money from the Federal health professions scholarship program provided about 3 percent of students' incomes, more than any other grant or scholarship program. Funds from the Federal health professions loan program usually provided the largest proportion from a single loan source — about 5 percent — although State government loans occasionally provided similar or larger amounts. Altogether, scholar-

ships and loans from the Federal health professions programs represented about 8 percent of the income of health professions students.

In all professions, childless married students obtained a larger proportion of their income from nonrefundable sources than did those with children or the single students [Table 9]. About one-half of the incomes of childless married students came from the spouses' contributions. The proportion from this source decreased as the number of children increased. Single students and married students with two or more children, in all the professions, obtained larger proportions of their incomes from their own earnings and savings, ranging from 23 to 40 percent, than did the other students. Single students received much more of their income from parents' contributions than did any of the married students.

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Table 8

PROPORTION OF HEALTH PROFESSIONS STUDENTS' INCOME FROM EACH SOURCE BY DISCIPLINE:
School year 1970-71

Source of income	Percent of students' income ¹						
	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Total income	100%	100%	100%	100%	100%	100%	100%
Nonrefundable funds:							
Total	81	74	79	83	85	81	82
Own earnings and savings	19	18	20	23	35	25	25
Spouse's contribution	30	30	34	31	20	32	32
Parent's contribution	20	18	17	20	17	16	14
Federal health professions scholarship	3	3	3	3	5	3	4
National Institutes of Health supported research	1	2	2	2	2	2	2
Other Federal research and/or training grants	1	2	2	2	2	2	2
State government scholarship	1	1	1	1	1	1	1
Other nonrefundable funds	7	4	4	4	7	4	6
Refundable funds (loans):							
Total	19	26	21	17	15	19	18
Federal health professions	5	5	5	5	4	4	5
Federal office of education guaranteed loans	2	4	4	3	2	3	3
National defense student loan	1	1	1	1	2	2	1
Own professional school loan	2	1	1	2	2	2	2
State government loan	3	6	3	3	2	5	2
Private bank loan	2	3	3	2	3	2	2
Other loans	4	6	4	3	2	2	4

¹ Income sources may not add to percent totals because of rounding.

² Less than 0.5 percent.

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Table 9
SOURCES OF HEALTH PROFESSIONS STUDENTS' NONREFUNDABLE INCOME BY MARITAL STATUS
School year 1970-71

Source and marital status	Percent of students' income ¹					
	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry Veterinary Medicine
All nonrefundable sources:						
Total percent	87%	74%	79%	83%	85%	81% 82%
Single	75	70	72	77	80	74
Married, no children	88	81	86	88	90	86
Married, one child	78	69	76	83	88	81
Married, two or more children	75	68	75	83	90	82
Own earnings and savings						
Single	19	18	20	23	35	25
Married, no children	24	23	24	29	40	34
Married, one child	13	13	15	17	27	18
Married, two or more children	21	19	23	26	35	22
Spouse's contribution	30	30	34	31	20	32
Single	55	53	58	55	46	52
Married, no children	30	30	34	37	32	32
Married, one child	19	21	22	31	24	29
Married, two or more children	20	18	17	20	17	14
Parent's contribution	36	38	38	38	26	35
Single	11	11	8	9	8	9
Married, no children	11	10	9	10	7	10
Married, one child	11	11	7	7	5	6
Married, two or more children						

See footnotes at end of table.

Table 9 (Continued)
SOURCES OF HEALTH PROFESSIONS STUDENTS' NONREFUNDABLE INCOME BY MARITAL STATUS:
School year 1970-71

Source and marital status	Percent of students' income ¹							Veterinary Medicine
	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry		
All nonrefundable sources:	87%	74%	79%	83%	85%	81%	82%	
Total percent								
Federal health professions scholarship	3	3	3	3	5	3	4	
Single	4	3	4	5	6	4	5	
Married, no children	2	2	2	2	4	2	2	
Married, one child	4	4	3	4	3	4	6	
Married, two or more children	6	3	5	6	3	4	6	
Other Federal and state grants and scholarships	3	1	1	1	1	1	1	
Single	3	1	1	1	2	1	2	
Married, no children	3	1	1	2	2	1	1	
Married, one child	3	2	1	1	3	1	1	
Married, two or more children	1	1	3	1	1	2	2	
Other nonrefundable funds	7	4	4	4	7	4	6	
Single	8	4	4	4	6	3	6	
Married, no children	5	2	2	4	5	3	5	
Married, one child	9	4	5	5	9	6	6	
Married, two or more children	14	9	9	9	25	11	9	

¹ Individual sources may not add to percent totals due to rounding.

² Less than 0.5 percent.

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Table 11
NUMBER OF LOANS AND AVERAGE AMOUNTS BORROWED FROM EACH SOURCE BY HEALTH PROFESSIONS STUDENTS:
School year 1970-71

Sources of loan:	Number of loans and average amount borrowed						
	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Number of loans:							
Single source:							
Federal health professions	4,447	207	2,227	456	2,301	149	670
Federal Office of Education, guaranteed loans	1,519	80	981	150	724	67	278
National defense student loan	586	2	264	40	1,089	36	57
Professional school	2,157	18	246	18	148	5	37
State government	1,519	138	854	109	774	111	214
Private bank	1,335	37	640	102	903	30	171
All others	1,928	88	859	105	741	43	346
Two sources:							
Federal health professions and others	4,547	435	2,638	385	1,503	137	446
All other combinations	2,201	134	1,061	76	460	67	210
Three sources:							
Federal health professions and others	1,023	244	742	66	240	40	147
All other combinations	355	43	49	9	20	3	26
Four sources:							
Federal health professions and others	159	61	119	10	32	3	10
All other combinations	28	7	9	—	—	—	7
Five sources:							
Federal health professions and others	12	6	—	—	—	—	4
All other combinations	—	2	—	—	—	—	—

(Continued on next page.)

Table 11 (Continued)
 NUMBER OF LOANS AND AVERAGE AMOUNTS BORROWED FROM EACH SOURCE BY HEALTH PROFESSIONS STUDENTS:
 School year 1970-71

Sources of loans	Number of loans and average amount borrowed						
	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Average amounts borrowed:							
Single sources:							
Federal health professions	\$1,127	\$ 748	\$ 886	\$ 826	\$ 719	\$ 860	\$ 670
Federal Office of Education							
guaranteed loans	1,435	1,513	1,468	1,278	1,133	1,603	278
National defense student loan	1,135	1,500	1,134	1,076	815	1,344	57
Professional school	1,509	748	820	502	660	790	705
State government	1,345	1,533	1,582	1,410	1,252	1,630	1,331
Private bank	1,505	2,105	1,464	1,507	998	1,676	1,306
All others	1,874	2,356	2,429	1,893	1,385	1,837	1,594
Two sources:							
Federal health professions	2,500	2,119	2,280	1,996	1,637	2,211	2,073
and others	2,727	2,831	2,784	2,670	2,103	2,788	2,394
All other combinations							
Three sources:							
Federal health professions	3,367	3,294	3,505	3,518	2,342	3,239	3,455
and others	3,413	4,112	3,131	2,844	2,875	2,967	2,983
All other combinations							
Four sources:							
Federal health professions	4,744	4,786	6,514	3,680	4,207	2,817	3,720
and others	4,862	5,236	6,000	—	—	—	5,607
All other combinations							
Five sources:							
Federal health professions	6,330	5,933	—	—	—	—	6,875
and others	—	8,200	—	—	—	—	—
All other combinations							

The distribution of loans among the students in a profession did not follow either the distribution of students from different income levels, or students with different marital statuses, or students in public or private schools. In all the health professions, a larger proportion of students from families with incomes less than \$15,000 had loans than did those with larger family incomes [Table 12]. Single and childless married couples obtained loans in proportion to their numbers in a profession, whereas married students with children showed a greater tendency to acquire loans. The distribution of students with loans followed no consistent trends by school control, except in medical schools, where public school students obtained loans less often than did private school students.

Table 13 shows that almost all of the students had some income from nonrefundable sources. The proportion obtaining loans among the professions ranged from 43 percent for pharmacy students to 70 percent for osteopathy students. The average amount of nonrefundable income ranged from \$3,008 for pharmacy students to \$5,115 for dental students. For those students acquiring loans, the average amount borrowed ranged from \$1,179 to \$2,298, again for pharmacy and osteopathy students, respectively. Therefore, it appears that pharmacy students borrowed least often and borrowed the lowest amounts. Fairly high amounts, averaging between \$1,817 and \$1,950 were borrowed by students of medicine [\$1,918], dentistry [\$1,950], and podiatry [\$1,817].

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Table 12
DISTRIBUTION OF HEALTH PROFESSIONS STUDENTS WITH AND WITHOUT LOANS BY FAMILY INCOME:
School year 1970-71

Percent of students with loans and without loans in health professions schools	Total ¹	Family income							
		Less than \$5,000	\$5,000 — \$9,999	\$10,000 — \$14,999	\$15,000 — \$19,999	\$20,000 — \$24,999	\$25,000 or more	None reported	
Medicine, all students	100%	7	20	24	14	11	21	3	3
With loans	100%	10	27	29	16	8	9	2	2
Without loans	100%	3	11	19	13	15	36	4	4
Osteopathy, all students	100%	12	24	26	13	7	13	7	7
With loans	100%	15	30	29	11	4	6	5	5
Without loans	100%	4	10	20	17	12	30	5	5
Dentistry, all students	100%	7	21	29	15	11	14	4	4
With loans	100%	9	27	32	15	8	7	3	3
Without loans	100%	3	12	22	16	16	27	5	5
Optometry, all students	100%	9	25	28	13	9	12	4	4
With loans	100%	14	33	29	11	5	4	3	3
Without loans	100%	4	16	26	15	14	20	6	6
Pharmacy, all students	100%	16	30	27	12	5	4	5	5
With loans	100%	20	33	30	10	2	1	3	3
Without loans	100%	13	28	25	14	7	7	7	7
Podiatry, all students	100%	11	23	26	14	10	10	6	6
With loans	100%	14	31	27	12	5	5	6	6
Without loans	100%	5	12	24	17	16	18	7	7
Veterinary Medicine, all students	100%	11	27	28	13	7	9	4	4
With loans	100%	16	33	29	11	5	5	2	2
Without loans	100%	6	20	28	15	10	14	6	6

¹ Percentages at each income level may not add to total because of rounding.

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Table 13
PROPORTION OF HEALTH PROFESSIONS STUDENTS REPORTING INCOME AND AVERAGE AMOUNT OF INCOME FROM EACH SOURCE:
School year 1970-71

Source of income	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Total number of students	40,414	2,151	16,645	2,832	20,706	1,146	5,001
Percent reporting income:							
Nonrefundable funds: Total	98 %	98 %	97 %	99 %	98 %	97 %	98 %
Own earnings and savings	67	69	72	77	73	75	81
Spouse's contribution	38	44	44	36	21	40	39
Parent's contribution	54	52	51	57	48	50	50
Federal health professions scholarship	18	35	25	28	26	26	24
National Institutes of Health supported research	6	2	2	★	★	1	1
Other federal research and/or training grants	4	1	1	1	1	★	1
State government scholarship	8	7	11	6	9	11	7
Other nonrefundable funds	23	15	16	17	24	18	21
Percent reporting loans:							
Refundable funds: Total	54 %	70 %	64 %	54 %	43 %	60 %	52 %
Federal health professions	25	44	34	32	20	29	26
Federal Office of Education	10	17	15	12	6	12	10
National defense student loan	3	5	4	3	7	8	3
Professional school	10	9	5	2	1	2	3
State government	10	24	13	9	5	17	8
Private bank	9	12	10	8	9	8	9
Other loans	12	22	16	9	8	10	15

★ Less than 0.5 percent.

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Table 13 (Continued)
PROPORTION OF HEALTH PROFESSIONS STUDENTS REPORTING INCOME AND AVERAGE AMOUNT OF INCOME FROM EACH SOURCE:
School year 1970-71

Source of income	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Total number of students	40,414	2,151	16,645	2,832	20,706	1,146	5,001
Average amount of income:							
Nonrefundable funds: Total	\$4,714	\$4,773	\$5,115	\$4,292	\$3,008	\$5,019	\$3,932
Own earnings and savings	1,578	1,675	1,769	1,541	1,671	2,030	1,439
Spouse's contribution	4,507	4,325	4,905	4,308	3,286	4,716	3,899
Parent's contribution	2,143	2,159	2,122	1,789	1,245	1,987	1,301
Federal health professions scholarship	964	469	727	628	697	682	763
National institutes of Health supported research	844	611	688	929	600	512	1,891
Other Federal research and/or training grants	846	618	811	910	582	525	838
State government scholarship	581	946	607	709	552	432	704
Other nonrefundable funds	1,752	1,600	1,372	1,344	1,016	1,404	1,304
Refundable funds (loans): Total	\$1,918	\$2,298	\$1,950	\$1,568	\$1,179	\$1,817	\$1,592
Federal health professions	1,084	661	865	800	702	859	885
Federal Office of Education guaranteed loans	1,414	1,564	1,550	1,324	1,130	1,486	1,298
National defense student loan	1,155	1,208	1,146	1,020	821	1,227	1,123
Professional school	1,269	628	729	517	684	846	670
State government	1,404	1,522	1,570	1,416	1,241	1,696	1,298
Private bank	1,407	1,488	1,503	1,355	1,033	1,487	1,278
Other loans	1,624	1,714	1,691	1,490	1,065	1,399	1,369

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The proportion of students obtaining some income from their own earnings and savings varied widely among the disciplines. It ranged from about two-thirds of the medical and osteopathic students to four-fifths of those in veterinary medicine. The average amount of income from this source ranged between \$1,439 and \$1,769 for all professions except podiatry where the average was \$2,030. In spite of the high proportion of students with income from their own earnings and savings, less than one-half of the students in most professions worked during the 1970-71 school term. Again, the one exception was pharmacy students of whom 54 percent reported working. Among the other professions, the percent working ranged from 28 percent of the medical students to 47 percent of the podiatry students. [Figure 5.] The median number of hours worked per week ranged from 14 for veterinary and medical students to 20 for pharmacy students. Very few students worked 30 or more hours a week. Generally, single students worked least often. The proportion of those working increased as the students married and as they acquired the responsibilities of children.

Table 13 also shows that spouses tended to contribute more than twice as much income as any other source, ranging among the disciplines from \$3,286 for pharmacy students to \$4,905 for dentistry students. Between 36 and 44 percent of all of the

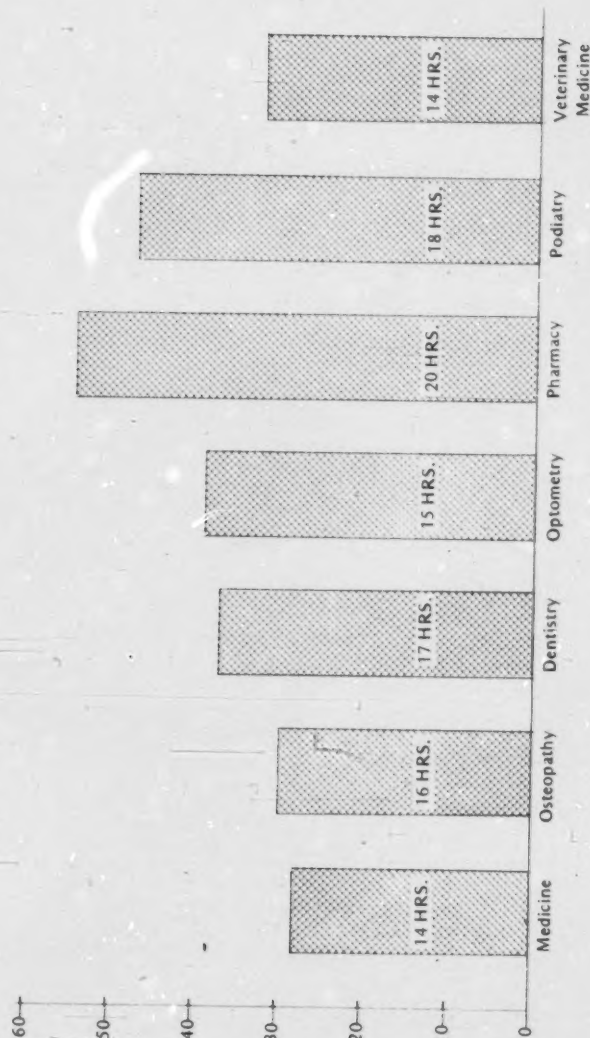
students had income from a spouse's contribution except for pharmacy students, of whom only 21 percent received help from a spouse. Approximately one-half of the students had contributions from parents, and such contributions averaged about \$2,000, again with the exception of pharmacy students, who received an average of \$1,245 from this source, and veterinary students, who received an average of \$1,301.

The one other source of nonrefundable funds from which a significant proportion of students received income was the Federal health professions scholarship program. Approximately one-fourth of the students in most professions were given this aid, although only 18 percent of the medical students and as much as 35 percent of the osteopathy students reported this source. Medical students received the highest average scholarship, \$964, and osteopathy students, the lowest, \$469. For students in the other disciplines, the average amounts of the scholarships ranged between \$628 and \$763. These proportions and amounts correspond closely to proportions and amounts determined from school reports.

By far, the largest proportion of students obtaining loans — approximately one half — reported getting one from the Federal health professions loan program. Of all of the students, those reporting such

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Figure 5
 PROPORTION OF HEALTH PROFESSIONS STUDENTS WHO WORKED AND MEDIAN NUMBER OF HOURS WORKED
 PER WEEK:
 School year 1970-71



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loans ranged from 20 percent for pharmacy students, to 44 percent for osteopathy students. The average loan generally fell in the range of \$661 [for osteopathy students] to \$885 [for veterinary students], except for medical students who received the highest amount — \$1,084. The largest loans from a specifically named source generally came from the Federal Office of Education guaranteed loan program, State governments, or private banks, although fairly large loans were often obtained from other unnamed sources by 8 to 22 percent of the students in different professions.

Fifty-four percent of all students in the health professions reported receiving loans resulting in approximately \$84.5 million borrowed [Table 14]. One-half of that amount, \$41.8 million, was borrowed by the medical students who represented 45 percent of all health professions students. The medical students received 51 percent of the Federal health professions loan funds. The professions of medicine, dentistry, and pharmacy, with the largest numbers of students, received the largest aggregate amounts of loan money from almost all sources. The Federal health professions loan program lent \$21.7 million, representing 26 percent of all loan money reported. It ranged from 18 percent of the money borrowed by osteopathic students to 31 percent for optometry students. The students reported that 19 percent of all loan money came from a number of unspecified sources, while the Federal Office of Education and State governments both provided about 15 percent each. The Federal health professions loan program was reported to have provided the largest proportion of all loan money to the students in each profession except osteopathy and podiatry. The latter students borrowed proportionately more money from State governments — 23 percent of osteopathy students and 27 percent of podiatry students.

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Table 14
PROPORTION OF HEALTH PROFESSIONS STUDENTS REPORTING LOANS, DISTRIBUTION OF LOAN MONEY, AND AGGREGATE AMOUNT
OF LOANS FROM EACH SOURCE:
School year 1970-71

Sources of loans	Total all professions	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Total number of students	88,895	40,414	2,151	16,645	2,832	20,706	1,146	5,001
Percent reporting loans:								
All sources ²	54%	54%	70%	64%	54%	43%	60%	52%
Federal health professions	26	25	44	34	32	20	29	26
Federal Office of Education	10	10	17	15	12	6	12	10
National defense student loan	4	3	5	4	3	7	8	3
Professional school	6	10	9	5	2	1	2	3
State government	10	10	24	13	9	5	17	8
Private bank	9	9	12	10	8	9	8	9
Other loans	12	12	22	16	9	8	10	15
Percent distribution of loan money:								
All sources ³	100%	100%	100%	100%	100%	100%	100%	100%
Federal health professions	26	26	18	24	31	27	23	27
Federal Office of Education	15	13	17	19	19	14	16	16
National defense student loan	5	3	4	4	4	12	9	4
Professional school	7	12	4	3	1	2	2	3
State government	15	14	23	16	15	12	27	12
Private bank	13	12	11	12	13	17	11	13
Other loans	19	19	23	21	16	16	12	24

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Table 14 (Continued)
 PROPORTION OF HEALTH PROFESSIONS STUDENTS REPORTING LOANS, DISTRIBUTION OF LOAN MONEY, AND AGGREGATE AMOUNT
 OF LOANS FROM EACH SOURCE:
 School year 1970-71

Sources of loans	Total all professions	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Total number of students	88,895	40,414	2,151	16,645	2,832	20,706	1,146	5,001
Aggregate amount of loans (in thousands):								
All sources ³	\$84,507	\$41,846	\$3,452	\$20,844	\$2,393	\$10,539	\$1,256	\$4,177
Federal health professions	21,652	11,053	630	4,957	734	2,864	283	1,131
Federal Office of Education	12,948	5,553	588	3,982	466	1,481	199	679
National defense student loan	4,051	1,462	122	841	100	1,230	117	179
Professional school	6,138	5,083	126	598	25	—	23	133
State government	12,634	5,958	799	3,432	368	1,235	336	506
Private bank	10,708	4,901	377	2,577	322	1,833	143	555
Other loans	16,374	7,836	809	4,457	377	1,725	155	1,015

¹ The figures in this table are based on student responses and may not agree with similar data from school and/or others.

² Percent of students by source adds to more than total because some students reported more than one source of loan.

³ Individual source percentages and amounts may not add to totals because of rounding.

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4. RELATIONSHIP BETWEEN INCOME AND EXPENSES

Between 9 and 18 percent of the students reported a balance between income and expenses, with the proportion requiring loans fairly evenly matched with the proportion of those who did not [Figure 6]. About one-half of the osteopathy, optometry, and podiatry students had deficits in spite of loans; in other disciplines the proportions of

students with deficits ranged from 37 percent of the medical students to 44 percent of dental and pharmacy students [Table 15]. There was a consistently larger proportion of childless married students with incomes exceeding their expenses, reflecting the large contributions from spouses. As the number of children increased, the proportion of students with income exceeding expenses dropped and the percent requiring loans to balance their budget generally increased. Fifty-one to 64 percent of the single

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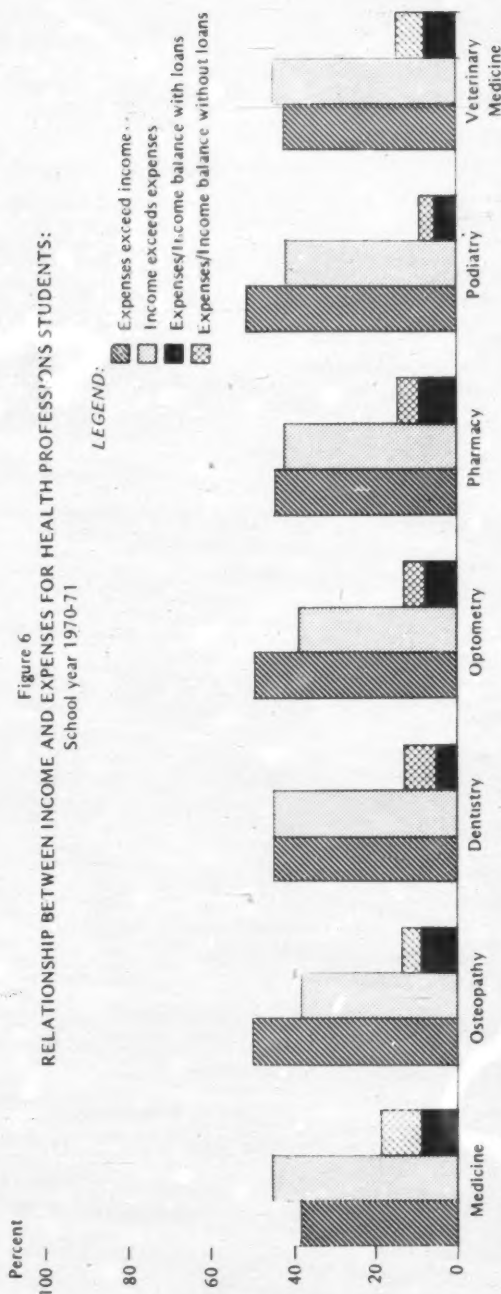


Table 15
RELATIONSHIP BETWEEN INCOME AND EXPENSES FOR HEALTH PROFESSIONS STUDENTS BY MARITAL STATUS:
School year 1970-71

Relation between income and expenses	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Total, all students	100%	100%	100%	100%	100%	100%	100%
In balance	18	13	12	13	14	9	15 ¹
With loans	8	8	7	6	5	4	6
Without loans	10	5	5	7	9	5	8
Income exceeds expenses	45	37	44	38	42	41	41
Expenses exceed income	37	50	44	49	44	50	41
Total, single students	100	100	100	100	100	100	100
In balance	25	21	19 ¹	19	18	13	21
With loans	10	11	10	8	7	6	8
Without loans	15	10	10	11	11	7	13
Income exceeds expenses	33	26	31	27	38	29	33
Expenses exceed income	41	53	50	54	44	57	46
Total, married - no children	100	100	100	100 ¹	100	100 ¹	100
In balance	8	8	6	6	8	4	8
With loans	4	6	3	3	3	2	4
Without loans	4	2	3	3	5	2	4
Income exceeds expenses	61	48	58	54	57	52	62
Expenses exceed income	31	44	36	39	35	43	30
Total, married - one child	100	100	100	100	100	100	100
In balance	12	5	5	6	3 ¹	7	7
With loans	7	4	5	5	3	3	5
Without loans	5	1	—	1	1	3	2
Income exceeds expenses	52	40	49	44	37	45	48
Expenses exceed income	36	55	46	50	60	48	45

See footnotes at end of table.

Table 15 (Continued)
RELATIONSHIP BETWEEN INCOME AND EXPENSES FOR HEALTH PROFESSIONS STUDENTS BY MARITAL STATUS:
School year 1970-71

Relation between income and expenses	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
Total, married - two or more children	100%	100%	100%	100%	100%	100%	100%
In balance	16	8	9	9	11	11	7
With loans	10	5	6	8	2	7	5
Without loans	6	3	3	1	9	4	2
Income exceeds expenses	46	37	43	42	34	44	40
Expenses exceed income	37	55	48	49	55	44	53

¹ Some totals may not add because of rounding.

students either had expenses exceeding their income or required loans to balance their income. These proportions tended to be higher than for any of the married students.

5. INDEBTEDNESS

For students in health professions schools other than pharmacy, the average amount of indebtedness as of June 1971 ranged from \$3,534 for students of veterinary medicine to \$5,966 for students of osteopathic medicine. Seventy-nine percent of all osteopathic students reported some debt, and the propor-

tions ranged from 72 percent for freshmen to 84 percent for seniors [Table 16]. The proportion of students with debts and the average amount of indebtedness increased for each year in school in all of the disciplines.

Variation by marital status, in the proportion of students with debts and the average indebtedness, followed the expected pattern of proportions of students with debts and of average amounts owed increasing with family size. Pharmacy students, who were younger and less likely to be married, were the single exception. While the proportion of single students with debts ranged from 60 percent in

Table 16
PROPORTION OF STUDENTS WITH DEBTS IN HEALTH PROFESSIONS SCHOOLS AND AVERAGE AMOUNT OF INDEBTEDNESS
By school class: June 1971

School class	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy	Podiatry	Veterinary Medicine
All classes:							
Percent reporting debts	65%	79%	74%	65%	56%	70%	66%
Average debt	\$4,289	\$5,966	\$4,888	\$3,559	\$2,477	\$4,115	\$3,534
Freshman:							
Percent reporting debts	61%	72%	66%	57%	52%	60%	58%
Average debt	\$2,975	\$3,457	\$3,162	\$2,560	\$1,974	\$3,119	\$2,670
Sophomore:							
Percent reporting debts	62%	79%	73%	67%	58%	70%	70%
Average debt	\$3,545	\$4,930	\$4,149	\$3,032	\$2,315	\$3,691	\$3,180
Junior:							
Percent reporting debts	68%	84%	78%	68%	57%	76%	68%
Average debt	\$5,194	\$6,069	\$5,322	\$3,898	\$2,650	\$4,368	\$3,851
Senior:							
Percent reporting debts	72%	84%	81%	73%	58%	80%	72%
Average debt	\$5,504	\$9,796	\$6,900	\$5,047	\$3,261	\$5,318	\$4,552

schools of veterinary medicine to 71 percent in osteopathic colleges, among married students with more than one child the range was from 83 percent in veterinary medicine schools to 93 percent in osteopathic colleges. The lowest average debt reported was \$3,376 for single optometry students, and the highest was \$8,548 for married osteopathic students with two or more children.

¹ West, M.D., and Altenderfer, M.A., *How Medical Students Finance Their Education*, U.S. Department of Health, Education, and Welfare, Public Health Service Publication No. 1336, Washington, D.C.: U.S. Government Printing Office, 1965.

² Smith, L.C.R., and Crocker, A.R., *How Medical Students Finance Their Education*, U.S. Department of Health, Education, and Welfare, Public Health Service Publication No. 1336-1, Washington, D.C.: U.S. Government Printing Office, 1970.

³ Beginning with the Health Professions Educational Assistance Act of 1963 (P.L. 88-129), and continuing with the Health Professions Educational Assistance Amendments of 1965 (P.L. 89-270), and the Health Manpower Act of 1968 (P.L. 90-490), a series of Federal loan and scholarship programs were established that covered all seven of the health professions in this survey.

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APPENDICES ☐

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DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
BUREAU OF HEALTH SERVICES
NATIONAL INSTITUTES OF HEALTH
BETHESDA, MARYLAND 20892

Bureau of
Health Manpower Education
February 1971

Dear Student:

The Bureau of Health Manpower Education, U.S. Public Health Service, is pleased to inform you that the National Health Manpower Survey, a study of students in the health professions finance their education. This survey is designed to provide much needed information on expenses, sources of funds, and indebtedness of students like yourself.

The findings of the study will provide reliable information for government agencies and the Congress to guide the formulation of appropriate policies and programs for financial aid to students in the health professions. The study will also provide information to the health professions, governmental agencies, and parents; and to educate, inform, state and financing education.

We therefore request your immediate attention in completing the enclosed questionnaire.

Please note that this questionnaire is not just for students who need, or expect to need, financial aid. It is just as important to know how many students on a nationwide basis can complete their education using their own resources.

The project is being carried out through a contract. After you have completed the questionnaire as directed, seal it, and mail it to the addresser shown on the questionnaire.

Your answers will be held in strict confidence. Data will be reported in the aggregate and all information which permits the identification of the individual or the school will be held strictly confidential, will be used solely by persons engaged in, and only for the purpose of the survey, and will not be disclosed or released to other persons or for any other purpose.

Thank you very much for your cooperation.

Sincerely yours,

Kenneth W. Endicott
Kenneth W. Endicott, M.D.
Director

Enclosure

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GENERAL INFORMATION		PERSONAL INFORMATION		EDUCATION		EMPLOYMENT		FINANCIAL		MILITARY		OTHER	
NAME: _____ DATE OF BIRTH: _____ SSN: _____ ADDRESS: _____ CITY: _____ STATE: _____ ZIP: _____ PHONE: _____ EMAIL: _____		RELATIONSHIP TO APPLICANT: _____ DATE OF BIRTH: _____ SSN: _____ ADDRESS: _____ CITY: _____ STATE: _____ ZIP: _____ PHONE: _____ EMAIL: _____		EDUCATION: _____ DEGREE: _____ MAJOR: _____ MINOR: _____ UNIVERSITY: _____ GRADUATION DATE: _____		EMPLOYMENT: _____ COMPANY: _____ POSITION: _____ START DATE: _____ END DATE: _____		FINANCIAL: _____ INCOME: _____ EXPENSES: _____ SAVINGS: _____ DEBTS: _____		MILITARY: _____ BRANCH: _____ POSITION: _____ START DATE: _____ END DATE: _____		OTHER: _____ REMARKS: _____	
1. EDUCATION: _____ 2. EMPLOYMENT: _____ 3. FINANCIAL: _____ 4. MILITARY: _____ 5. OTHER: _____		6. EDUCATION: _____ 7. EMPLOYMENT: _____ 8. FINANCIAL: _____ 9. MILITARY: _____ 10. OTHER: _____		11. EDUCATION: _____ 12. EMPLOYMENT: _____ 13. FINANCIAL: _____ 14. MILITARY: _____ 15. OTHER: _____		16. EDUCATION: _____ 17. EMPLOYMENT: _____ 18. FINANCIAL: _____ 19. MILITARY: _____ 20. OTHER: _____		21. EDUCATION: _____ 22. EMPLOYMENT: _____ 23. FINANCIAL: _____ 24. MILITARY: _____ 25. OTHER: _____		26. EDUCATION: _____ 27. EMPLOYMENT: _____ 28. FINANCIAL: _____ 29. MILITARY: _____ 30. OTHER: _____			

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18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	
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Appendix B

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ASSOCIATION OF AMERICAN MEDICAL COLLEGES
SUITE 500 ONE DUPONT CIRCLE, N.W. WASHINGTON, D.C. 20036

JOHN A. COOPER, M.D., M.P.H.
PRESIDENT

WASHINGTON 200 333-5174

Dear Student:

On behalf of the Association of American Medical Colleges, I would like to encourage your cooperation in the survey of medical students' professional attitudes and values. This survey is being conducted by the Student Attitudes and Values Study, a project of the Bureau of Health Professions, Department of Education of the U.S. Public Health Service.

As Dr. Indegutt's lecture indicates, information gained from this survey will have important implications for policy and financial assistance to students in the health professions.

We urge your cooperation in this important study.

Sincerely yours,

John A. D. Cooper, M.D.
John A. D. Cooper, M.D., M.P.H.
President

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American Osteopathic Association

JANUARY, 1971

Dear Student:

On behalf of the American Osteopathic Association, I would like to express our appreciation for the cooperation of the health professions in the completion of the survey. As Dr. Endicott's letter indicates, the information gained from this survey will have important implications for policy in financial assistance to students in the health professions. We urge your cooperation in this important study.

Sincerely yours,

Edward P. Crowl, Jr.
Edward P. Crowl, Jr.

ENCLOSURE

Appendix D

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AMERICAN DENTAL ASSOCIATION

Dear Dental Student:

On behalf of the American Dental Association, I would like to encourage your cooperation in completing the Survey of Health Professions Student Financing. As Dr. Endicott's letter indicates, the information gained from this survey will have important implications for developing policy related to financial assistance to students in the Health Professions.

We urge your participation in completing the questionnaire and participating in the most important project.

Sincerely,

Thomas J. Dinley

Thomas J. Dinley, Ph.D.
Associate Secretary
Council on Dental Education

TJD:fa
Enc.

AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

VARRO S. TILLER, President
School of Pharmacy and Pharmaceutical Sciences, Purdue University, Lafayette, Indiana 47907
ARTHUR E. STEWART, Vice President
School of Pharmacy, University of Connecticut, Storrs, Connecticut 06268
JAMES H. HARRIS, Secretary
College of Pharmacy, University of Washington, Seattle, Washington 98195
CHARLES W. BLIVEN, Executive Secretary
800 Ohio Avenue, Suite 300, Maryland 20910

Dear Student:

On behalf of the American Association of Colleges of Pharmacy, I would like to encourage your cooperation in the Survey of Health Profession Student Financing. As Dr. Endicott's letter indicates, the information gained from this survey will have important implications for policy in financial assistance to students in all of the health professions. As he states, all information which permits identification of student will be strictly confidential.

We urge your cooperation in this important study.

Sincerely yours,

Charles W. Bliven

Charles W. Bliven
Executive Secretary

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AMERICAN OPTOMETRIC ASSOCIATION



Dear Student:

On behalf of the American Optometric Association, I am pleased to inform you of the results of the Survey of Health, Education, and Professional Student Financing. As Dr. Endicott's letter indicates, the information gained from this survey will have important implications for policy in financial assistance to students in the health professions.

Sincerely yours,

Harold Bailey
J. Harold Bailey
Executive Director

JHB:lq



AMERICAN ASSOCIATION OF COLLEGES
OF PODIATRIC MEDICINE

2000 EAST 10TH AVE. WASHINGTON, D.C. 20001

AMERICAN ASSOCIATION OF COLLEGES OF PODIATRIC MEDICINE

Dear Student:

As I'm sure you are already aware, the American Association of Colleges of Podiatric Medicine has extended its cooperation to the Bureau of Health Manpower Education, U.S. Public Health Service, in the purpose of conducting a Survey of Health Profession Student Financing.

I would like to encourage your cooperation in this very important undertaking. The information gained from this survey will greatly assist the podiatry profession in relating the financial needs for students of podiatric medicine to Federal, State, and local agencies.

I strongly urge your cooperation in this important study.

Sincerely yours,

Robert W. Oliver

Robert W. Oliver
Executive Director

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Appendix H

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AMERICAN VETERINARY MEDICAL ASSOCIATION

535 North Dearborn Avenue, Chicago, Illinois 60610

Dear Student:

On behalf of the American Veterinary Medical Association, I would like to encourage your cooperation in the Survey of Health Profession Student Financing. As Dr. Endicott's letter indicates, the information gained from this survey will have important implications for policy in financial assistance to students in the health professions. We hope you will give your full cooperation in this important study.

Sincerely,

M. A. Carlson

M. A. Carlson, D.V.M.
Executive Vice President